

1      **What is claimed is:**

- 2      1. A stator comprising:  
3                a bobbin having an axial winding wound therearound;  
4                plural pole plates each having a pole end, each said pole end having a  
5                pole face; and  
6                an axle tube extending through the bobbin and said plural pole plates,  
7                the axle tube conducting magnetic flux created by the winding to said  
8                plural pole plates;  
9                a half of said plural pole plates being mounted on top of the bobbin  
10          and another half of said plural pole plates being mounted to a bottom of  
11          the bobbin, the number of the half of said plural pole plates mounted on  
12          top of the bobbin being not less than two, the number of the half of said  
13          plural plates mounted to the bobbin being not less than two, thereby  
14          increasing magnetization, reducing magnetic flux leakage, and gaining  
15          effective guided overall magnetic flux by means of increasing an overall  
16          thickness for effectively conducting the magnetic flux to said plural pole  
17          plates.  
18      2. The stator as claimed in claim 1, wherein there are two pole plates  
19          mounted to each of the top and the bottom of the bobbin to thereby form a  
20          stator having four poles.  
21      3. The stator as claimed in claim 1, wherein there are three pole plates  
22          mounted to each of the top and the bottom of the bobbin to thereby form a  
23          stator having six poles.  
24      4. The stator as claimed in claim 1, wherein the pole face of each of said  
25          plural pole plates extends along a plane perpendicular to a general plane of  
26          the respective pole plate.

- 1       5. The stator as claimed in claim 1, wherein the pole face of each of said  
2           plural pole plates includes an inclined side.
- 3       6. The stator as claimed in claim 1, wherein the pole face of each of said  
4           plural pole plates is a trapezoid.
- 5       7. A stator comprising:  
6                 a bobbin having an axial winding wound therearound;  
7                 plural pole plates each having two diametrically disposed pole ends,  
8                   each said pole end having a pole face; and  
9                 an axle tube extending through the bobbin and said plural pole plates,  
10               the axle tube conducting magnetic flux created by the winding to said  
11               plural pole plates;
- 12                 a half of said plural pole plates being mounted on top of the bobbin  
13               and another half of said plural pole plates being mounted to a bottom of  
14               the bobbin, the number of the half of said plural pole plates mounted on  
15               top of the bobbin being not less than two, the number of the half of said  
16               plural plates mounted to the bobbin being not less than two, thereby  
17               increasing magnetization, reducing magnetic flux leakage, and gaining  
18               effective guided overall magnetic flux by means of increasing an overall  
19               thickness for effectively conducting the magnetic flux to said plural pole  
20               plates.
- 21       8. The stator as claimed in claim 7, wherein there are two pole plates  
22               mounted to each of the top and the bottom of the bobbin to thereby form a  
23               stator having eight poles.
- 24       9. The stator as claimed in claim 7, wherein the pole face of each of said  
25               plural pole plates extends along a plane perpendicular to a general plane of  
26               the respective pole plate.

- 1        10. The stator as claimed in claim 7, wherein the pole face of each of said
- 2                 plural pole plates includes an inclined side.
- 3        11. The stator as claimed in claim 7, wherein the pole face of each of said
- 4                 plural pole plates is a trapezoid.